Amendments to the Abstract:

Please replace the Abstract page on page 25, with the following amended abstract.

Abstract:

The present invention is related to a device and a method for producing a radioisotope of interest from a target fluid irradiated with a beam of accelerated charged particles, the device includes in a circulation circuit (17): an irradiation cell (1) having a metallic insert (2) able to form a cavity (8) designed to house the target fluid and closed by an irradiation window (7), the cavity (8) including at least one inlet (4) and at least one outlet (5); a pump (16) for circulating the target fluid inside the circulation circuit (17); an external heat exchanger (15); the pump (16) and the external heat exchanger (15) forming external cooling means of the target fluid; the device means for pressurizing (14) of the circulation circuit (17) and the external cooling means of the target fluid are arranged in such a way that the target fluid remains inside the cavity (8) essentially in the liquid state during the irradiation.